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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/524,688

03/09/2006

Naoki Iijima

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09/01/2009

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EXAMINER

JACOBS, TODD D

ART UNIT

PAPER NUMBER

3746

NOTIFICATION DATE

DELIVERY MODE

09/01/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Office Action Summary	Application No. 10/524,688	Applicant(s) IIJIMA ET AL.	
	Examiner TODD D. JACOBS	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6 and 8-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6 and 8-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/31/2009 has been entered.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-6, 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al (4,664,601) in view of Sakagami et al (5,961,291).

3. In re claim 1, Uchida discloses a vacuum pump comprising:

- A pair of pump rotors rotatably disposed in a casing (1), said pump rotors being rotatable synchronously in opposite directions;
- Note that as shown on fig. 3 of Uchida, from T1' to T2, the rotors are rotated in a forward direction for steady state evacuation;
- A motor (16) configured to rotate said pump rotors;
- However, Uchida fails to disclose a pump-rotor controller for controlling rotation of said pump in accordance with a predetermined pattern when the pump is started, the predetermined pattern including a combination of at least two of rotation of said pump

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rotors in a forward direction, rotation of said pump rotors in a reverse direction, and stop of the rotation.

4. Nevertheless, Sakagami discloses a pump-rotor controller for controlling rotation of said pump in accordance with a predetermined pattern when the pump is started, the predetermined pattern including a combination of at least two of rotation of said pump rotors in a forward direction, rotation of said pump rotors in a reverse direction, and stop of the rotation. Note that col 9, line 38 states, while discussing figure 1 below “the pump rotor may be turned forwardly or reversely a predetermined number of times by a small angle”, step S2 could be in forward or reverse directions. This allows the rotor to scrape deposits off of the surrounding structure and thereby allowing for a more efficient pump.

5. Therefore, it would have been obvious to modify Uchida in view of Sakagami by using the forward/backward motions of Sakagami (along with the magnetic bearing devices and control devices of Sakagami necessary to perform them) with the pump of Uchida in order to scrape deposits of the surrounding structure when needed as taught by Uchida, leading to a more efficient pump. In this case, the motor configured to rotate the pump rotors in Uchida/Sakagami is the magnetic bearing unit 3 of Sakagami.

6. Note further that it also would have been obvious to one having ordinary skill in the art at the time of the invention to instead, not use the magnetic bearings to rotate the pump back and forth, but use the actual motor of Uchida to simply move the pump back and forth (while using sensors and algorithm as taught by Sakagami). This uses the teaching of Sakagami to rotate back and forth, while using the motor/pump of Uchida without adding too much extra hardware (such as magnetic bearings) to make the pump more efficient. In this case, the motor used to rotate the pump rotor is the motor 16 of Uchida.

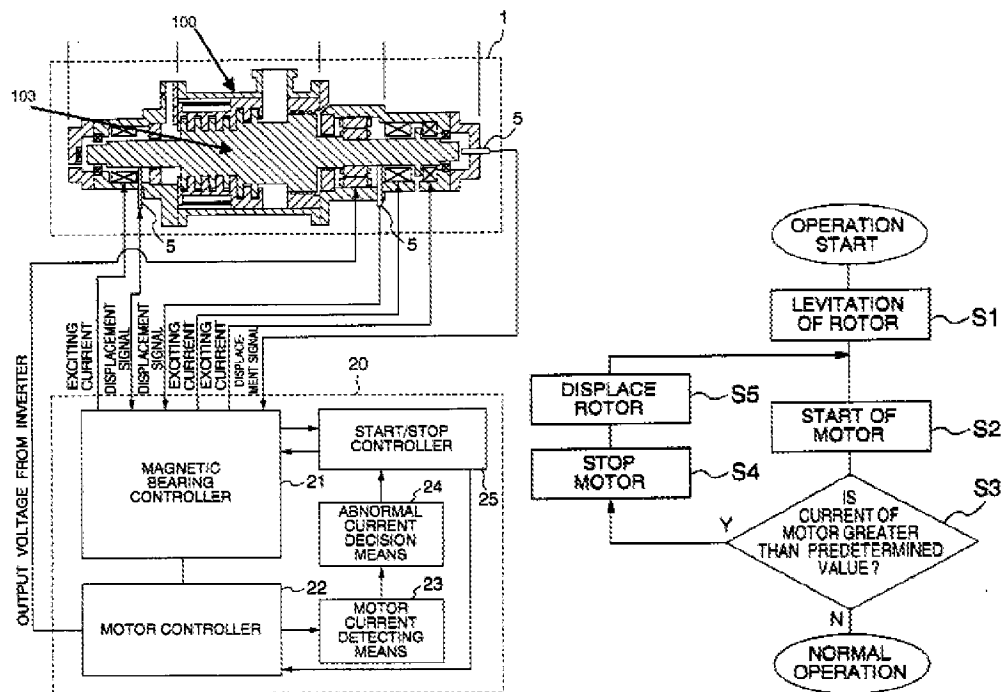


Figure 1

7. In re claim 3, with reference to figure 1 above, Uchida/Sakagami discloses that the predetermined pattern is set in said pump-rotor controller such that said pump rotor is driven in the order of the rotation in said forward direction, the stop, and the rotation in said forward direction. Note that if the pump of Uchida is "turned forwardly or reversely a predetermined number of times by a small angle" as stated above, the pump does turn forward, stop, then turn forward again. Note it must stop at some point when it switches to reverse from going forward.

8. In re claim 4, with reference to figure 1 above, Uchida/Sakagami discloses the vacuum pump wherein the predetermined pattern is set in the pump-rotor controller such that the rotors are rotated in the order of said reverse direction and said forward direction. Note that if the pump of Uchida is "turned forwardly or reversely a predetermined number of times by a small angle" (col 9, line 38) as stated above, the pump does turn in reverse, stop, and then turn forward again.

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9. In re claim 5 with reference to figure 1 above, Uchida/Sakagami discloses:
- a state-judging device (24 of Sakagami) for judging whether said pump rotor is rotated normally or not at the time of starting said vacuum pump;
 - wherein when said state-judging device (24 of Sakagami) judges that said pump rotor is not rotated normally at the time of starting said vacuum pump, said pump rotor is rotated in accordance with said predetermined pattern (occurring at step S3 of Sakagami; note that Sakagami had alternative embodiments that also disclosed this for RPM instead of current detection).
10. Regarding to claims 6, 8-11, under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. *In re King*, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986). MPEP 2112.02.

Response to Arguments

Applicant's arguments filed have been fully considered but they are not persuasive. Applicant states that the motor of Sakagami is not a motor but just a magnetic bearing. However, since the magnetic bearing rotates the shaft as described above, it is considered a motor. Further, as explained above, it is also obvious to not use the magnetic bearings of Sakagami, but simply the algorithm and apply it to the motor of Uchida. Applicant goes through great length to describe the differences between the Instant Invention and the Prior Art, however, it is suggested that those differences be placed into the claims.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TODD D. JACOBS whose telephone number is 571-270-5708. The examiner can normally be reached on Monday - Friday, 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art Unit
3746

/TODD D. JACOBS/
Examiner, Art Unit 3746